

ANDREYEV, Yu.

Oscillograph using eighteen transistors. Radio no.8:43-46 Ag '65.  
(MIRA 18:7)

S/048/62/026/008/011/028  
B104/B102

AUTHORS: Kovrigin, O. D., Andreyev, Yu. A., Kartashov, V. M., Laty-  
shev, G. D., Sychikov, G. I., and Troitskaya, A. G.

TITLE: Multiplicities of the  $\text{Er}^{167}$  nuclear  $\beta$ -transitions with  
energies of 208 and 532 keV

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26,  
no. 8, 1962, 1028 - 1030

TEXT: A Ta target was irradiated with 680-MeV protons and the Tu fraction  
separated chromatographically. A  $\beta$ -spectrometer with double focusing was  
used to study the  $\text{Tu}^{167}$  conversion electron spectrum of the Tu fraction.  
The lines  $L_{II}$  and  $L_{III}$  (Fig. 1) were separated by the spectrometer, the  
line  $L_I$  was separated graphically. The ratios of the internal conversion  
coefficients were determined for  $Z = 68$  and  $E = 208.3$  keV (Table). The  
208-keV transition is assumed to be of the isomeric type. The  $L_{II}$  and  $L_{III}$   
lines of the 532-keV transition are very weak. Type E1 or E2 is ascribed  
to the 532-keV transition. There are 2 figures and 1 table.  
Card 1/2

L 32890-65 EWT(m) DIAAP

ACCESSION NR: AP8004837

8/0048/85/029/001/0144/0160

AUTHOR: Burmistrov, V.R.; Andreyev, Yu.A.; Vongay, A.D.; Karetskaya, S.P.; Latyshev, G.D.; Kovrigin, O.D.TITLE: Investigation of the  $Ce^{134}$ - $La^{134}$ - $Ba^{134}$  decay chain Report, 14th Annual Conference on Nuclear Physics held in Tbilisi 14-22 Feb 1964

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.29, no.1, 1965, 144-150

TOPIC TAGS: nucleus, energy level, beta decay, positron, gamma spectrum, cerium, lanthanum, barium

ABSTRACT: The  $Ce^{134}$ - $La^{134}$ - $Ba^{134}$  decay chain was investigated by direct measurement of the positron,  $\gamma$  ray and internal conversion spectra and by observation of the  $\gamma$ - $\gamma$  and positron- $\gamma$  coincidences. The source was prepared by 2 hour bombardment of a tantalum target with 660 MeV protons and subsequent chromatographic separation of the cerium fraction. The positron spectra were observed with a double focusing beta spectrometer having a resolution of 0% and also, in coincidence with  $\gamma$  rays, with a 3 cm diameter stilbene scintillator. The energy analysis of the coinciding radiations was performed by the usual fast-slow coincidence technique with a resolving

Card 1/2

L 32890-65

ACCESSION NR: AP5004537

time of  $4 \times 10^{-8}$  sec in the fast channel. The observed spectra are presented graphically and are discussed in some detail. The positron spectrum was resolved into three components with maximum energies of 1.01, 1.8 and 2.38 MeV respectively. The intensity of the 1.8 MeV positron emission was very low, and this component was observed only in coincidence with 0.6 MeV  $\gamma$  rays. The intensity of the 1.01 MeV positron component was 18% of the total. These three positron components and two  $\gamma$  transitions of 0.805 and 1.47 MeV energy are attributed to the decay of  $\text{La}^{134}$  in accord with the work of B. Stover (Phys. Rev. 81, 8, 1951) and R. K. Girgis and R. Lieshout (Nucl. Phys. 12, 672, 1959). The 1.47 MeV  $\gamma$  transition is associated with a level excited by the 1.01 MeV positron decay. The possibility of a 10% systematic error in the positron energy measurements is mentioned in a note added in proof. "The authors thank A. F. Novgorodov for performing the chemical separation of the cerium fraction." Orig. art. has: 7 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00/--Jan65

ENCL: 00

SUB CODE: NP

NR REF SOV: 003

OTHER: 002

Card 2/2

L 32829-65 897(a) 01AAB  
ACCESSION NR: AP004540

B/0048/85/029/001/0178/0178

AUTHOR: Andreyev, Yu.A.; Baskrovnyy, I.M.

TITLE: Effect of electric bias on the luminosity of a magnetic beta spectrometer  
/Report: 14th Annual Conference on Nuclear Physics held in Tbilisi: 14-22Feb1964/

SOURCE: AN SSSR. Izvestiya, Seriya Fizicheskaya, v.20, no.1, 1965, 172-176

TOPIC TAGS: beta spectroscopy; electric field; luminosity

ABSTRACT: The influence of the focusing effect of electric bias of the source on the luminosity of a magnetic  $\beta$  spectrometer is discussed theoretically. With the assumption of a point source and an infinite entrance plane it is found that a 4 KV bias on a source of 10 keV electrons changes the effective luminosity by less than 0.2%, i.e., the effect is quite negligible. The distortion of the field by the source holder and the side walls, however, leads to a much greater effect. The effect of these factors was determined by measurements in an electrolytic bath, and it was found that by appropriate design of the source holder (the source holder, e.g., should be perpendicular to the entrance slit rather than parallel to it).

Card 1/2

L 32829-65

ACCESSION NR: AP5004545

the focusing effect of the bias field can be considerably reduced. A cylindrical source holder is described which is particularly advantageous in this respect. It is concluded that method of varying the bias on the source can be successfully employed for precision measurement of conversion electron spectra. "In conclusion, the authors express their gratitude to V.M.Kel'man, Doctor of Physical and Mathematical Sciences, for very valuable consultation. Orig. art. has: 5 formulas and 5 figures.

ASSOCIATION: none

SUBMITTED: 00/---/1965

ENCL: 00

SUB CODE: NP, EM

NR REF SOV: 005

OTHER: 000

Card 3/2

S 12030-65 RWT(3) DIAL

ACCESSION NR: AP0004846

S/0048/65/029/001/0177/0180

AUTHOR: Andreyev, Yu.A.; Gorbakov, B.A.; Kovrigin, G.D.; Latyshev, G.D.TITLE: Setup employing a large double focusing spectrometer for studying  $\beta$ - $\gamma$  coincidences/Report, 14th Annual Conference on Nuclear Physics, held in Tbilisi, 14-22 Feb 1984/SOURCE: AN BSSR, Izvestiya Seriya Fizicheskaya, v.29, no.1, 1985, 177-180

TOPIC TAGS: beta spectroscopy; gamma spectrometer; coincidence counting; internal conversion

ABSTRACT: A setup for  $\beta$ - $\gamma$  coincidence investigations is briefly described. The  $\beta$  channel employs a higher transmission version of the double focusing  $\pi$ /E magnetic beta spectrometer described by G.D.Kovrigin, N.V.Kolesnikov and G.D.Latyshev (Pribory i Tekhnika eksperimentov No.2, 19, 1981). The radius of the equilibrium orbit is 60 cm, the pulse resolution is 0.38% and the transmission is 0.7% of  $4\pi$ . Two Geiger-Mueller counters in coincidence were employed to record electrons with energies below 100 keV, and a plastic scintillator was employed to record higher energy electrons. The  $\gamma$  channel employs a  $2 \times 3$  cm<sup>2</sup> NaI(Tl) crystal scintillator with

Card 1/2

D 32830-65

ACCESSION NR: AP600454a

A photomultiplier located in the magnet gap. Several means for compensating the magnetic field in the vicinity of the photomultiplier were tried, and rectangular windings similar to Helmholtz coils were found to be satisfactory. Turning on the compensating field displaced conversion lines by less than 0.2%. The instrument was tested by recording the K conversion spectrum of  $Gd^{140}$ , and the curves obtained are shown. The setup is currently being employed to identify K X rays by observing their coincidence with conversion electrons of different energies. In conclusion, the authors thank V.P. Burmistrov for discussing the results of the construction of the  $\beta$ - $\gamma$  coincidence setup and for the method of identifying K conversion lines. Orig. art. 1148, 3 figures.

ASSOCIATION: none

SUBMITTED: 00/000000

ENCL: 00

SUB CODE: NP

NR REF SOV: 004

OTHER: 005

Copy 2/2

1 33609-65 REC-1/REC(k)-2/ENT(d)/ENT(1)/REC(t) Pg-1/Pk-1/Pl-1/Po-1/Pq-1/Pe-1  
LJP(a)

ACCESSION NR: AP6005959

8/0048/65/029/002/0306/0310

AUTHOR: Andreyev, Yu.A.; Baskrovnyy, I.M.; Dragomoshchenko, L. I.; Latyshev, G.D.; Chursin, G.P.

TITLE: Automatic measurement of conversion electron spectra /Report, 14th Annual Conference on Nuclear Spectroscopy held in Tbilisi, 14-23 Feb 1964/

SOURCE: AN SSSR. Investiya. Seriya fizicheskaya, v.29, no.2, 1965, 306-310

TOPIC TAGS: beta spectroscopy, automation

ABSTRACT: An automatic  $\beta$  spectrometer is described. The instrument is the result of an attempt to devise an automatic spectrometer that would be easier to construct than that previously described by one of the authors and others (Izv. AN SSSR, Ser. fiz. 28, 1079, 1962), and thus to make the benefits of automation available to more and smaller laboratories. Commercially available Soviet components, with or without modification, were employed wherever possible. During the operation of the instrument the  $\beta$ -spectrometer magnetic field is held constant and a dc bias on the  $\beta$ -ray source is varied in steps. Thus, no inverse feedback is required. The counts recorded at a given value of the bias are accumulated in one of the 60

Card 1/2

I 33609-65

ACCESSION NR: AP8008959

channels available for this purpose, and when the complete spectrum has been recorded it can be displayed on a cathode-ray tube or the contents of the 99 channels can be read successively on an indicator. The bias can be varied from -4 to +4 kV in steps of 20, 40, 100 or 200 V and counting times for each bias value from 10 to 4000 sec are available. A second instrument is described which is easier to construct but is less accurate. In this instrument the bias is varied continuously and the output pulses are shifted from time to time from one recording channel to the next. Orig.art.has: 6 figures.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: DP, NP

NR REF SOV: 002

OTHER: 000

Card 2/2

ANDRIYEV, Yurii Andreyevich: *STALINNA DOKTRINA*.

[Material in Volgograd region of Soviet Union, and other  
marchit officials. Volgograd, Volgogradskaya Oblast',  
1963. 75 p. (Wine, E:3)]

ANDREYEV, Yu.A.

Analysis of a double "T" type filter with a single variable  
resistor control. *Elektrosvyaz'* 14 no.2:54-59 F '60.  
(MIRA 13:5)

(Electric filters)

7511

S/106/61/000/007/001/004  
A055/A127

9.3230 (also 11579)

AUTHORS: Andreyev, Yu. A., Kobak, V. O.

TITLE: Properties of the double-T bridge, taking into account the effect of the generator and load parameters

PERIODICAL: Elektrosvyaz', no. 7, 1961, 3 - 11

TEXT: All previous publications dealing with the properties of the double-T bridge, and taking into account the generator impedance and the load, are limited to particular cases. The authors of the present article examine the most general case. After a brief recapitulation of the main formulae of the double-T bridge when the generator impedance and the load are not taken into account, the authors present a general analysis of the loaded bridge. The formulae giving the zero-balance condition and the tuning frequency  $\omega_0$  are the same, here, as in the case of the nonloaded bridge. To determine transmission factor T, the author gives the following formula ( $\sigma = \omega/\omega_0$  being the relative detuning, and  $Y = \sigma - 1/\sigma$  the generalized relative detuning):

$$\frac{1}{T} = \frac{U_{inp}}{U_{outp}} = \left(1 - i\frac{D_1}{Y}\right) + \frac{Z_{gen}}{Z_T} \left[ (D_1 + D_2) - i\frac{D_1 D_2}{Y} \right] - i\frac{Z_T}{Z_1} \frac{1}{Y} - \frac{Z_{gen}}{Z_1} \left(1 - i\frac{D_2}{Y}\right) \quad (5)$$

Card 1/1.

2551h S/106/61/000/007/001/004  
A055/A127

Properties of the double-T bridge...

where:

$$Z_T = R_1 \left( \frac{1+\beta}{\sqrt{\alpha\beta n}} - i \frac{1}{\omega} \frac{(1+\alpha)}{\alpha} \right)$$

$$D_1 = \frac{\alpha(1+\beta) + n(1+\alpha)}{\sqrt{\alpha\beta n}}$$

$$D_2 = \frac{(1+\beta) + n(1+\alpha)}{\sqrt{\alpha\beta n}}$$

$n$  being any positive number ( $0 < n < \infty$ ),  $\alpha = R_1/R_2$  and  $\beta = C_2/C_1$ . The balance conditions of the bridge characteristics are determined, in the general case, by the relations

$$\operatorname{Re} T(\omega) = \operatorname{Re} T\left(\frac{1}{\omega}\right) \quad (6)$$

$$\operatorname{Im} T(\omega) = -\operatorname{Im} T\left(\frac{1}{\omega}\right)$$

The analysis of the possible ways of connecting the double-T bridges reveals that, from the point of view of their use in selective tube (or transistorized) amplifiers, the most interesting connection is that shown in Fig. 4. In this case,  $C_{gen}$  represents the transfer capacitance from the anode of a tube,  $R_{gen}$  is determined by the anode load and the internal tube resistance,  $R_i$  is the input resistance of

Card 2/7

2851h 3/106/61/000/007/001/004  
A055/A127

Properties of the double-T bridge...

a tube, and  $C_1$  serves only to balance the bridge characteristics. The authors analyze the conditions (relating the parameters of the generator, of the load and of the bridge) to be satisfied for the symmetry of the amplitude-phase characteristics of the circuit of Fig. 4. There are five variants of these conditions. The most exacting condition is:

$$R_1 C_1 = n R_{\text{gen}} C_{\text{gen}}; \quad R_1 C_1 = R_1 C_1; \quad R_1 C_1 = R_2 C_2; \quad R_1 R_2 = (1+n) R_{\text{gen}} R_1 \quad (8d)$$

The transmission factor is given by the following expression, whichever of the five sets of conditions is satisfied:

$$T = \frac{T_m}{1 - i \frac{d_1}{Y} + i \frac{Y}{d_2}} \quad (9)$$

In the case of conditions (8d):

Card 3/7

44

205114 S/106/61/000/007/001/004  
A055/A127

Properties of the double-T bridge...

$$\left. \begin{aligned} T_m &= \frac{\alpha^2}{(\alpha+\delta)(\alpha+\delta+2\alpha\delta)} \\ d_1 &= \frac{(1+n)(1+\alpha)(\alpha+\delta)^2}{\sqrt{n\alpha^2}} T_m \\ d_2 &= \frac{(1+n)\alpha}{\delta^2 \sqrt{11T_m}} \end{aligned} \right\} \quad (10)$$

where  $\delta = \frac{R_1}{R_2}$ ,  $\alpha = \frac{R_1}{R_2}$ . The frequency characteristic of the bridge, in the general case examined by the author, is

$$|H| = \frac{T_m}{\sqrt{1 + \left(\frac{d_1}{Y} - \frac{Y}{d_2}\right)^2}} \quad (11)$$

The phase characteristics are calculated according to formula:

$$\varphi = \arctg\left(\frac{d_1}{Y} - \frac{Y}{d_2}\right).$$

Using (9), it is easy to plot the amplitude-phase characteristic of the bridge in the complex plane. This characteristic consists of two superposed circumferences. The Q-factor of an RC selective system is determined, in the general case, as the

Card 4/7

2:51: S/106/61/000/007/001/004  
A055/A127

Properties of the double-T bridge...

steepness of the frequency characteristic at the tuning frequency. As applied to the case of formula (9), the Q-factor is:

$$Q = \frac{d \left| \frac{U}{I_m} \right|}{dY} \Big|_{Y=0} = \frac{1}{d_1} \quad (12)$$

After examining several particular cases (for instance, the case of a symmetrical bridge system  $R_1 = R_2 = R, C_1 = C_2 = C$ ), the authors draw the following conclusions as to the properties of the double-T bridge, considering the effect of generator and load parameters. 1) The double-T bridge (in real systems) possesses asymmetrical amplitude-phase characteristics only when a definite relationship exists between the parameters of the generator, of the load and of the bridge. 2) Symmetrical characteristics of the bridge are obtained only if the load and the generator internal impedance are both either purely resistive or purely capacitive, or when they are both resistive-capacitive. Any mixed case leads to unavoidable asymmetry. 3) The selectivity of a selective amplifier with a double-T bridge is much worse at a great detuning, than it was generally supposed. There are 7 figures and 7 references: 4 Soviet-bloc and 3 non-Soviet-bloc. The references to English-language publications read as follows: Cowles, The parallel - T resistance-capacitance network. Proc.IRE, 1952, no. 12; Buckley, Parallel-T network. "Wireless Engineer",

Card 5/7

Properties of the double-T bridge...

2511 S/106/61/000/007/001/004  
A055/A127

1956, no. 7; Yosiro Oono, Design of parallel-T resistance-capacitance network.  
Proc.IRE, 1955, no. 5.

SUBMITTED: December 12, 1960

[Abstracter's note The following subscripts are translated in the text and formulae l (load) stands for H; gen (generator) stands for G or G.]

X

Card 6/7

ANDREYEV, Yuriy Aleksandrovich; KOBAK, Valeriy Oskarovich;  
MICHURIN, V.I., kand. tekhn. nauk, rezonant, APTEMAN,  
M.A., red.; TSAL, R.K., tekhn. red.

[Double T-shaped bridges in selective amplifiers] Dvoynye  
T-obraznye mosty v izbiratel'nykh usiliteliakh. Leningrad,  
Sudpromgiz, 1962. 103 p. (MIRA 15:9)  
(Amplifiers, Electron-tube) (Bridge circuits)

ANDREYEV, Yu. A.; BESKROVNIY, I. M.; LATYSHEV, G. D.; CHURSIN, G. P.

3

"Methods of Automatic Observation and Measurement of Spectra of Conversion  
Electrons in Magnetic Spectrometers."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22  
Feb 64.

IYaF, AN KazSSR (Inst Nuclear Physics, AS KazSSR)

ANDREYEV, Yu. A.; GORBATOV, E. A.; KOBRIGIN, O. D.; LATYSHEV, G. D. 5

"Apparatus for the Investigation of Beta-Gamma Coincidences with Application of a Large Beta Spectrometer with Double Focussing."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

IYaF AN KazSSR (Inst Nuclear Physics, AS KazSSR)

ANDREYEV, Yu.A.; BESKROVNIY, I.M.

Effect of electric shifting on the luminosity of a magnetic  
 $\beta$ -spectrometer. Izv. AN SSSR Ser. fiz. 29 no.1:172-176  
Ja '65. (MIRA 18:2)

BURMISTROV, V.A.; ARDENEV, Yu.A.; VINOGRAD, A.I.; KOPCHENKO, G.I.;  
LAFYANIN, G.P.; KOVCHIGIN, G.P.

Copy of the chain 6134 - 1a134 - 1a134. Inv. AN 134. Ser. 212.  
29 no.1:144-150 Ja 1965. (11111 1312)

ANDREYEV, YU.A.; GORBATOV, E.A.; KURASHIN, I.I.; SYTSIN, G.I.

Apparatus for studying  $\beta$ -radiation spectra with a curved-crystal  
focusing spectrometer. Izv. AN SSSR Ser. Fiz. Mat. Nauk. 1965, No. 1:157-160  
Ja 165. (NINA 1965)

ANDREYEV, Yu.A.; BEKTOVNIYY, I.M.; DRAGOMIR SHCHENKO, I.I.; MALYSHEV, G.P.;  
CHURSHIN, G.P.

Automatic measurement of conversion electron spectra. Izv. AN SSSR  
Ser. fiz. 29 no.2:306-310 F '65. (MIRA 18:3)

APPROVED FOR RELEASE

APPROVED FOR RELEASE

L 27204-66 EWT(1)/EWT(m)/ETC(m)-6 IJP(c) WII

ACC NR: AP6017444

SOURCE CODE: UR/0361/65/000/002/0035/0040

AUTHOR: Andreyev, Yu. A.; Beskrovnyy, I. M.; Latyshev, G. D.

52  
B

ORG: none

TITLE: Methods for automation of physical measurements in magnetic beta-spectrometers

19

SOURCE: AN KazSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 2, 1965, 35-40

TOPIC TAGS: spectrometer, automation, magnetic circuit, automation equipment, electronic rectifier

ABSTRACT: A brief review of the advantages of automation in spectrometers and inadequacies in currently proposed methods of implementing such automation make up a large portion of this article. A general diagram of an automated spectrometer is presented, along with some suggestions for the construction of various elements. The article concludes with the suggestion that an automated spectrometer have two basic components - a universal control block containing the timing, program, and recording blocks; and a block specially constructed for each type of spectrometer consisting of a regulator, a magnetic field stabilizer, and a high voltage rectifier or a high voltage bias rectifier. Undoubtedly, of greatest value is the bibliography of current works in this area.

Orig. art. has: 1 figure. [JPRS]

SUB CODE: 09, 13 / SUBM DATE: 09Oct64 / ORIG REF: 014 / OTH REF: 005

2

Card 1/1 CC

L 05725-67 EWT(d)/EWP(v)/EWF(k)/EWF(h)/EWF(l)

ACC NR: AP6007835

SOURCE CODE: UR/0120/66/000/001/0190/0191

AUTHOR: Andreyev, Yu. A.; Beskrovnyy, I. M.; Gorbatov, E. A.

ORG: Institute of Nuclear Physics AN KazSSR, Alma-Ata (Institut yadernoy fiziki AN KazSSR)

TITLE: Automatic control of a high-voltage source

SOURCE: Pribory i tekhnika eksperimenta, no. 1, 1966, 190-191

TOPIC TAGS: automatic control system, power supply, electronic rectifier, voltage divider/ VS-22 electronic rectifier

ABSTRACT: A controlled high-voltage source based on a standard VS-22 rectifier is described. The unit may be used for automatically switching high voltages from 4 to 40 kv in steps of 20, 40, 100 or 200 v. The modifications made in the VS-22 unit are described. A block diagram of the rectifier is shown in the figure. A pulse from an external controlling device (e. g. a timer) moves step switch 4 by one position. This corresponds to a change in the output voltage by the selected step. The next pulse switches the voltage through still another step etc. A complete revolution of the step switch closes contacts which feed the control circuit 6 of the motor 5. Starting of the motor switches high-voltage divider 3 through one position. This sequence of

UDC: 539.28.078

Card 1/2

ANDREYEV, Yu.A.; ASTRAKHANSKIY, I.N.

American pirates on ocean and sea lanes. Mor.sbor. 44 no.1:10-16  
Ja '61. (MIRA 14:3)

(Freedom of the seas)  
(United States--Defenses)

ANDREYEV, Yu.A.; ASTRAKHANSKIY, I.N.

New example of peaceful cooperation. Mor.sbor. 44 no.2:27-32 F  
'61. (MIRA 14:4)

(Hodeida, Yemen--Harbor)

I 38863-66 EWP(j)/EWP(k)/EWT(m)/T/EWP(v) IJF(c) RM/RH/WW

ACC NR: AR6015914

SOURCE CODE: UR/0081/65/000/022/S065/S065

AUTHOR: Kil'p, Yu. L.; Glizburg, I. L.; Batova, N. I.; Andreyev, Yu. Ye. 45  
BTITLE: Ultrasonic welding of products made of thermoplastics 15

SOURCE: Ref. zh. Khimiya, Abs. 22S390

REF SOURCE: Tr. N.-1. tekhnol. in-t, vyp. 8, 1964, 98-102

TOPIC TAGS: thermoplastic material, ultrasonic welding, *POLYAMIDE, RESIN, CAPRONE, STYRENE, COPOLYMER, POLYSTYRENE*

ABSTRACT: Ultrasonic welding of the following thermoplastics was studied: polyamide resin 68, cast capron<sup>68</sup> of brand V, styrene copolymer (SNP-2) polystyrene, high-strength polystyrene. The study established the feasibility of welding thermoplastics with ultrasound; the unit UZAP-2 was built for this purpose, and its technical data are cited. The unit has an acoustic feedback for the automatic fine tuning of the generator frequency to the natural frequency of the transducer and for stabilizing the amplitude of oscillations of the instrument. The welding was carried out at amplitudes of ultrasonic vibrations of 15-25  $\mu\text{m}$ , forces pressing the instrument to the part of 20-150 kg, and a time of 1.5-6.25 sec. The strength of joints made of high-strength polystyrene was 4 times greater than that of the base material (60 instead of 15  $\text{kg}/\text{cm}^2$ ). A series of data are cited on the strength of weld joints, details of the process, and design of the instruments. The main advantage of the ultrasonic welding of plastics is the liberation of the maximum amount of heat in the welding

Card 1/2 -

L 38863-66

ACC NR: AR6015914

zone without overheating of the remaining mass of the part. A. M. [Translation of abstract].

SUB CODE: 11,13

*ns*  
Card 2/2

ANDREYEV, Yu.F.

Permafrost and its importance in prospecting for tectonic structures  
in the northern part of West Siberia. Trudy VNIIGRI no.158:191-218  
'60. (MIRA 14:3)

(Siberia, western--Frozen ground)

ANDREYEV, Yu.F.; BELORUSOVA, Zh.M.

Geology of the Taz Peninsula. Trudy VNIGRI no.186:176-202  
'61.

(MIRA 15:3)

(Taz Peninsula--Geology)

ANDREYEV, Yu. F.; BELORUSOVA, Zh. M.

Relationship of the cryogenic relief forms to the geology  
and geomorphologic structure of the Taz Peninsula. Trudy Inst.  
merzl. AN SSSR 19:44-54 '62. (MIRA 16:1)

(Taz Peninsula--Landforms)

(Taz Peninsula--Frozen ground)

ANDREYEV, Yu.F.; YAKOVLEV, O.N.

Hydrological study of Mesozoic and Cenozoic sediments in the  
northwestern part of the West Siberian oil- and gas-bearing province.  
Trudy VNIGRI no.225:303-310 '63. (MIRA 17:3)

11800

23997  
5/148/61/000/007/011/015  
E111/E180

AUTHORS: Kidin, I.N., and Andreyev, Yu. G.  
TITLE: Cyaniding of steel with high-frequency heating  
Source: Izvestiya vysshikh uchebnykh zavedeniy,  
Chernaya metallurgiya, 1961, No. 5, pp. 153-161

TEXT: The advantages of gas cyaniding over gas carburisation are higher diffusion rates and a more wear-resisting surface. I.N. Kidin (Ref. 1; Metallurgizdat, 1950) has shown that the advisability of using high-frequency heating in thermo-chemical treatment is due solely to the higher temperatures and therefore rates which can be obtained. For example, of the 200 I-khachev car works its adoption enabled cementation rates to be raised tenfold. In cyaniding, however, temperature cannot be raised without reducing the nitrogen content of the layer. The authors report their investigation of the possibilities of increasing cyaniding temperatures. In the investigation type 30 and 30XCT (30KhA) steels were used. The latter is an alloy steel widely used in the case-hardened state in the car industry. Engineer G. S. Mat'yuk participated in the work. Cyaniding was carried out in a mixture  
Card 1/4

X

Cyaniding of steel with high-<sup>239/7</sup> S/148/63/000/005/011/015  
E111/E100

of town's gas and ammonia flowing at 200 m<sup>3</sup>/min (2-3-50% ammonia concentration) in a laboratory installation, heating being effected from a 400-kw 2500-rps rotary generator. The temperature was measured with a chromel-alumel thermocouple spot-welded to the specimen surface and was kept constant automatically at 800, 900, 950 and 1000 °C with holding times of one-half, one and one-and-a-half hours. Cyanided specimens were cooled in 800 °C and oil quenched, giving a fully hardened cyanided layer and a troostite-martensite (50KbGF steel) or sorbite (30 steel) core. Comparative tests were carried out with cyaniding using ordinary heating and with cementation using town's gas alone and induction heating. Hardness at different depths was determined by the Vickers method with a load of 5 kg, the amount of residual austenite in the surface zone of the layer by the X-ray method, the wear resistance on an Amslet machine at a load of 75 kg. It was found that with induction heating the nitrogen content of the surface layer is 1.5-2.5 times that with ordinary heating, enabling higher temperatures to be used, the optimum ammonia content falls from 30-35 to 8-10%. When town's gas is used with ammonia, the temperature should be 900-950 °C with induction heating, since  
Card 2/4

Swainding of steel with high-

23957

07/148/51/000/005/011/015  
F119/E180

higher temperatures lead to excessive carbon pick-up, especially with the alloy steel. Carbon contents were higher in cyanided than in carburized layers using induction heating or in cyanided layers with ordinary heating. If higher temperatures are required, the gas composition must be changed (e.g. to "endogas", that is, ammonia). Whilst in the first wear tests carburized layers had better resistance than nitrided ones (induction heating) the situation was reversed if tests were repeated on the same specimens. The work confirms the advisability of using induction heating in cyaniding. Discussing the advantages of induction heating, the authors point out that here the effective atomic nitrogen concentration at the work surface is probably much higher than with ordinary heating, since the gas reaching the surface is almost entirely dissociated.

There are 6 figures, 1 table, and 11 references, 4 Soviet and 3 English. The English language references read as follows:  
 Ref. 1: A. Bramley, B. Furness, J. Iron Steel Inst., 1958, p. 107.  
 Ref. 2: G. Davila, J. Iron Steel Inst., V. 164, 1956, pp. 277-284.  
 Ref. 9: A. Schuler, Iron Coal Trades Rev., 1953, pp. 973-981.  
 Card 379

L 39688-62 EWT(d)/EWT(m)/EWP(w)/EPT(o)/EVA(a)/EWP(t)/EWP(v)/EWP(k)/T/  
 EWP(s)/EWP(b)/EVA(h) Pt-4/Pob NJW/JD/WB/EM  
 ACCSSION NR: AP9008390 S/0148/65/000/003/0157/0160

AUTHOR: Andreyev, Yu. G.; Zakharov, Ya. K.; Kidin, I. N.;  
Lizunov, V. I.; Maksimova, O. V.; Shtramal', M. A.

49  
42  
B

TITLE: Heat treatment by electrical heating of high-strength steel

SOURCE: IVUZ. Chernaya metallurgiya, no. 3, 1965, 157-160

TOPIC TAGS: high strength steel, electrical heating, superstrength steel, steel heating, low alloy steel, complex alloy steel, steel heat treatment, conventional heating, steel strength, steel ductility, steel hardness

ABSTRACT: Conventional heat treatment of large welded superstrength shells presents difficulties since the shells require protection against oxidation and decarburization. Therefore, an attempt has been made to use rapid-rate electric heating without a protective atmosphere or vacuum. Specimens of cold-rolled, annealed VKS-1 (42Kh2GSNM) superstrength steel, 3.3 x 9.2 x 320 mm, were resistance heated with an alternating current of 50 cps to temperatures of up to 250C at a rate of 75C/sec and air cooled at a rate varying from

Card 1/3

L 39688-65  
ACCESSION NR: AP5008390

50 to 80C/sec. The resulting steel structure and properties were compared with those obtained with conventional heat treatment (austenitizing at 940C for 40 min in a vacuum of  $10^{-2}$  mm Hg followed by air cooling). It was found that the surface microhardness was 70 H<sub>200</sub> lower than the core microhardness in specimens electrically heated to 1100C, as compared to 120 H<sub>200</sub> in those conventionally heat treated; but in both cases the decarburization extended only to a depth of 0.04 mm. The hardened specimens were tempered in air at 200-600C for 1 hr (at 300C, for up to 4 hr). No significant difference in the microstructure of electrically and conventionally heat treated specimens was observed. Electrically heated (to 1100C) specimens, however, had a mean grain diameter of 8  $\mu$ , as compared with 11  $\mu$  in conventionally heat treated specimens. The hardness obtained by conventional hardening from 940C can be achieved by electrical heating to 1100C. Specimens electrically heated at a rate of 75C/sec, to 1100C, air cooled, and tempered at 300C for 4 hr had a tensile strength of 192 kg/mm<sup>2</sup>, an elongation of 3.4%, a reduction of area of 34%, and a bend angle of 33°, compared to 195 kg/mm<sup>2</sup>, 3.4%, 33%, and 26° in conventionally heat treated steel. There are two groups of martensitic steels with a tensile strength of up to

Card 2/3

L 39688-65

ACCESSION NR: AP5008390

200 kg/mm<sup>2</sup>; The VKS-1 is a comparatively low-alloy steel which contains only 0.07% V and 0.50% Mo and acquires a high strength with tempering below the temper brittleness range. For steels of this group, the use of electrical heating has definite advantages. Steels of the second group contain 1-2% Mo and less than 0.5% V and require tempering at about 500C. Electrical heat treatment of a typical steel of this group, 40Kh5SMiP (Vascojet 1000) steel containing 0.43% V and 1.27% Mo, sharply increased the embrittlement in the temper brittleness range and produced a strength 10-30 kg/mm<sup>2</sup> lower than conventional heat treatment. Orig. art. has: 2 figures and 1 table. [MS]

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute for Steel and Alloys)

SUBMITTED: 02Jul64

ENCL: 00

SUB CODE: MM, IE

NO REF SOV: 002

OTHER: 003

ATD PRESS: 3229

EJL  
Card 3/3

RODICHEV, S.D.; MERKIN, I.B.; MILOKHOV, N.I.; POPELLO, A.P.; SOLOV'YEV,  
N.D.; SHEMSHURIN, N.A.; SORKIN, N.B., retsenzent; SMIRNOV, I.I.,  
retsenzent; ANDREYEV, Yu.I., retsenzent; BRAVYY, Z.A., retsenzent;  
SOKOLOVA, V.Ye., red.; MEDVEDEV, L.Ya., tekhn.red.

[Handbook on the primary processing of cotton] Spravochnik po  
pervichnoi obrabotke khlopka. Moskva, Gos.nauchno-tekhn.izd-vo  
lit-ry po legkoi promyshl., 1959. 687 p. (MIRA 13:4)  
(Cotton gins and ginning)

ANDREYEV, Yu.K.

Magnesianarfvedsonite, a new variety of alkali amphibole. Trudy IGEM  
no.10:12-20 '57. (MIRA 11:6)

(Arfvedsonite)

ANDREYEV, Yu.K.; PETROV, V.P., otv. red.; MORGASOV, G.G., red.izd-va;  
DOROKHINA, I.N., tekhn.red.

[Alkali-amphibole mineralization in certain Ural serpentine  
massifs] Shchelochno-amfibolovaya mineralizatsiia v nekotorykh  
zmeevikovykh massivakh Urala. Moskva, Izd-vo Akad nauk SSSR,  
1959. 101 p. (Akademiia nauk SSSR. Institut geologii rudnykh  
mestorozhdenii, petrografii, mineralogii i geokhimii. Trudy,  
no.39) (MIRA 13:2)

(Ural Mountains--Mineralogy)

PETROV, V.P.; ANDREYEV, Yu.K.

Mineralogy of asbestos and the U.S.S.R. amphibole-asbestos in the  
general classification. Trudy IGEM no.31:5-18 '59.

(Asbestos)

(MIRA 12:7)

ANDREYEV, Yu.K.; GODOVIKOV, V.N.

Occurrences of alkali hornblendes in lower Permian marls of the  
Dzhezkazgan deposit. Trudy IGEM no.31:112-118 '59.

(MIRA 12:7)

(Dzhezkazgan District--Hornblende)

ANDREYEV, Yu.K.

Genetic types of the deposits of alkali-amphibole (blue)  
asbestos as a basis of prospecting for them. Zakonom. razm.  
polezn. iskop. 6:256-291 '62. (MIRA 16:6)

1. Institut geologii rudnykh mestorozhdeniy, petrografii,  
mineralogii i geokhimii AN SSSR.  
(Amphibole) (Asbestos)

ANDREYEV, Yu.K.; VOLCHEK, I.I.; YEREMEYEV, V.P.; PETROV, V.P.;  
TOKMAKOV, P.P.

Asbestos potential of the U.S.S.R. Zakonom. razm. polezn.  
iskop. 6:113-152 '62. (MIRA 16:6)

1. Institut geologii rudnykh mestorozhdeniy, petrografii,  
mineralogii i geokhimii AN SSSR i Ministerstvo geologii i  
okhrany neдр SSSR.

(Asbestos)

ANDREYEV, Yu.K.

Resources of amphibole asbestos and possibilities of their  
utilization as fillers. Trudy IGEM no.95:61-70 '63. (MIRA 16:12)

KIMEL'NITSKAYA, Ye.L., prof., doktor ekon. nauk; VOLKOV, M.Ya.,  
kand. ekon. nauk; BEL'CHUK, A.I., kand. ekon. nauk; IORDANSKAYA,  
E.N., ml. nauchn. sotr.; MENZHINSKIY, Ye.A.; PAVLOVA, M.A.,  
kand. ekon. nauk; VASIL'KOV, N.P., kand. ekon. nauk; ARDAYEV,  
G.B., kand. ekon. nauk; VAL'KOV, V.A., kand. ekon. nauk;  
TIMASHKOVA, O.K., kand. ekon. nauk; ANDREYEV, Yu.K., ml. nauchn.  
sotr.; FUSHKIN, A.A., ml. nauchn. sotr.; MAKSIMOVA, M.M., kand.  
ekon. nauk; KIRSANOV, A.V., kand. ekon. nauk; SHEBANOV, A.N.,  
ml. nauchn. sotr.

[Changes in the economic structure of the countries of Western  
Europe] *Izmeneniia* v ekonomicheskoi strukture stran Zapadnoi  
Evropy. Moskva, Nauka, 1965. 433 p. (MIRA 18:9)

1. Akademiya nauk SSSR. Institut mirovoy ekonomiki i mezhdunarodnykh otnosheniy.

ANDREYEV, Yu.N.; DZYUBENKO, M.S.; PROKTISTOV, V.I., redaktor.

~~Medicine, Physiology~~

[Physics in modern medicine] Fizika v sovremennoi meditsine. [Leningrad]  
Medits, Leningradskoe otd-nie, 1953. 162 p. (MLRA 7:6)  
(Medicine, Physiomedical)

ANDREYEV, YU. N.

USSR/Chemical Technology. Chemical Products and Their Application -- Silicates.  
Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5157

Author: Andreyev, Yu. N.

Institution: Academy of Sciences USSR

Title: Concerning Methodological Foundations of Current Concepts of Glass  
Structure

Original

Publication: Sb. Stroyeniye stekla. M.-L., AN SSSR, 1955, 283-289

Abstract: An analysis is presented of the crystallite hypothesis and of the  
Zachariasen-Warren hypothesis, from which it follows that the  
crystallite hypothesis is the better justified.

Card 1/1

SOV/115459-2-16/38

25(6)

AUTHOR: Andreyev, Yu.N.

TITLE: A Lighter Type of Laboratory Sclerometer (Laboratornyy sklerometr oblegchennogo tipa)

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 2, p 31 (USSR)

ABSTRACT: A lighter type of laboratory sclerometer has been developed to measure the hardness of materials - according to the Shor method - whose dynamic resilience module does not differ greatly from the static one. The apparatus consists of a glass tube with an inner diameter of 10 mm (and height 500 mm), which has 5 mm divisions marked on it. It is fixed to a tripod, so that its position may be adjusted. The sclerometer works by measuring the recoil height of a steel ball weighing 0.5 g. If the ball leaves surface traces, the material under examination must be tested with a lighter ball. Under laboratory conditions, the recoil height from the surface of good quality material is 8.9 cm, from reject material 4.8 cm, i.e. it is twice as high with good

Card 1/2

SOV/115-59 2-16/38

A Lighter Type of Laboratory Sclerometer

quality as with poor quality material. This knowledge enables rapid control to be made of surface quality of printing - copper and zinc - plates. This sclerometer is especially suitable for comparative hardness testing of various glass and metallic substances.

Card 2/2

ANDREYEV, Yu.N.; BUTKOVSKIY, A.G.

Problem involving optimum control of heating massive bodies.  
Inzh.-fiz. zhur. 8 no.1:87-92 Ja '65. (MIRA 18:3)

1. Institut avtomatiki i telemekhaniki, Moskva.

RUSINCV, L.I. [deceased]; ANDREYEV, Yu.N.; GOLENETSKIY, S.V.; KISLCV, M.I.;  
FILIMONOV, Yu.I.

Alpha-decay of the isomer  $\text{Bi}^{210m}$ . Zhur. eksp. i teor. fiz. 40  
no.4:1007-1015 Ap '61. (MIRA 14:7)

J. Leningradskiy fiziko-tehnicheskiy institut AN SSSR.  
(Alpha rays) (Bismuth--Decay)

ANDREYEV, Yu. N

DECEASED

1/964

c. '64

*Chemistry  
Rubber*

ANDREYEV, Yu.N. (Moskva); BUTKOVSKIY, A.G. (Moskva)

Optimum control of the heating of solid bodies. Izv. AN  
SSSR. Tekh. kib. no.5:45-54 S-O '64. (MIRA 17:12,

ANDREYEV, Yu.N.; MANDEL'SHTAM, M.I.

Systematic position of the genus Lyubimovina. Paleont. zhur.  
no.2:152-154 '64. (MIRA 17:7)

1. Kompleksnaya laboratoriya geologii nefi i gaza Tadzhikistana  
Vsesoyuznogo nauchnogo issledovatel'skogo geologorazvedochnogo  
neftyanogo instituta.

MANDEL'SHTAM, M.I.; ANDREYEV, Yu.N.

Present status of studies and ways for further investigations of  
the ostracod fossils of the suborder Podocopina. Vop. mikropaleont.  
no. 8: 223-230 '64. (MIRA 18:5)

1. Tadzhikskaya kompleksnaya laboratoriya Vsesoyuznogo nauchno-  
issledovatel'skogo geologorazvedochnogo neftyanogo instituta.

SEMIOKHIN, I.A.; PANCHENKOV, G.M.; SALIMOVA, K.M.; ~~ANDREYEV~~, Yu.P.

Isotope exchange between carbon dioxide and its ethanolamine  
solutions. Vest. Mosk. un. Ser. 2:Khim. 19 no.1:35-38 Ja-F '64.  
(MIRA 17:6)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

SEMIKHIN, I.A.; ANDREYEV, Yu.P.; PANCHENKOV, G.II.

Effect of addition on the dissociation of carbon dioxide in  
silent discharge. Vest. Mosk. un. Ser. 2. Khim. 19 no. 6:40-  
46 S-O 164. (MIRA 17:11)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

SFMIOKHIN, I.A.; ANDREYEV, Yu.P.; PANCHENKOV, G.M.

Separation of oxygen and carbon isotopes in dissociation of  $\text{CO}_2$   
in the silent electrical discharge. Zhur. fiz. khim. 37 no.12:  
2782-2783 D '63. (MIRA 17:1)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

ANDREYEV, Yu.P.; SEMIOKHIN, I.A.; PANCHENKOV, G.M.; PARAYEV, V.V.

Dissociation of carbon dioxide in the silent electric discharge.  
Zhur. fiz. khim. 38 no.3:794-797 Mar '64. (MIRA 17:7)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.

ANDREYEV, Yu.P.; SEMIOKHIN, I.A.; PANCHENKOV, G.M.

Redistribution of oxygen and carbon isotopes between carbon dioxide and the products of its dissociation in a silent electric discharge. Zhur. fiz. khim. 38 no.4:1032-1035 Ap '64.  
(MIRA 17:6)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.

L 16631-65 EWT(1)/EPA(w)-2/EEG(t)/EWA(m)-2 Pub-10 AEDC(a)  
ACCESSION NR: AP4044450 S/0078/84/038/008/2078/2080

AUTHOR: Semiokhin, I. A.; Andreyev, Yu. P.; Panchenkov, G. M.

TITLE: Dissociation of carbon dioxide in a silent electric discharge during circulation

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 8, 1964, 2078-2080

TOPIC TAGS: carbon dioxide, dissociation, silent electric discharge, gaseous reaction

ABSTRACT: This work is concerned with the dissociation of CO<sub>2</sub> in a silent electric discharge as a function of pressure of gas, temperature of the walls of the ozonizer and the strength of the discharge. The experimental set-up is shown in fig. 1. The dimensions of the ozonizer are as follows: the gap for passage of gas--1 mm, the volume of the reaction zone--40 cm<sup>3</sup>. The pressure was measured by means of a u-shaped mercurial manometer. The degree of dissociation of CO<sub>2</sub> was calculated by measuring the pressure in the system:  $\alpha = 2(p-p_0)/p$  where  $p_0$  is the initial pressure and  $p$  is the final pressure in the system. Since the apparatus pressure changed, only one parameter was maintained cons-

Card 1/3

L 16631-65

ACCESSION NR: AP4044450

tant--current. The active strength of the discharge was determined from current voltage characteristics, taken at different pressures of the system and temperatures of the walls of the ozonizer. The investigation was made of the degree of dissociation of  $\text{CO}_2$  as a function of the strength of electric discharge at 100, 300, 500 and 700 mm of Hg initial pressures at 5, 20, 47 and  $87^\circ \text{C}$ . It was shown that stationary dissociation equilibrium is essentially independent of the temperature of ozonizer, it changes very little with pressure and is greatly dependent of the strength of the discharge. The maximum degree of dissociation was obtained at 300 mm pressure ( $\alpha = 34\%$ ). Orig. art. has: 7 figures.

ASSOCIATION: Moskova gosudarstvennyy universitet im. M. V. Lomonosova  
(Moscow State University)

SUBMITTED: 29Jul63

ENCL: 01

SUB CODE: GC

NO REF SOV: 004

OTHER: 000

Card 2/3

L 16631-65  
ACCESSION NR: AP4044450

ENCLOSURE: 01

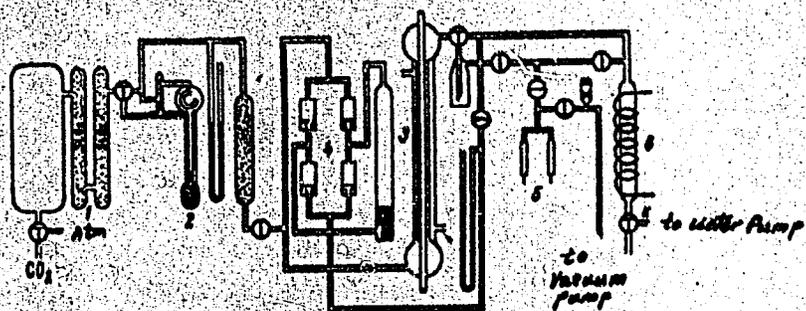


fig. 1

Apparatus: 1--drying column, 2--rheometer, 3--ozonizer, 4--circulation pump,  
5--ampules, 6--furnace for decomposition of ozone and oxidation

Card 3/3

L 16670-65 EWT(m) PB-4 DIAAP  
ACCESSION NR: AP4044452

S/0076/64/038/008/2087/2091

AUTHOR: Andreyev, Yu. P.; Semiokhin, I. A.; Panchenkov, G. M. 13

TITLE: Redistribution of oxygen and <sup>14</sup>carbon isotopes between carbon dioxide and its dissociation products in a silent electric discharge during circulation of gas

SOURCE: Zhurnal fizicheskly khimii, v. 38, no. 8, 1964, 2087-2091

TOPIC TAGS: isotope exchange, oxygen, carbon, carbon dioxide, carbon monoxide, silent electric discharges, isotope enrichment

ABSTRACT: The purpose of this work was to investigate the redistribution of oxygen and carbon isotopes between CO<sub>2</sub> and its dissolution products in a silent electric discharge in a flow apparatus. The experimental part of this work was the same as used previously by these authors I. A. Semiokhin, Yu. P. Andreyev and G. M. Panchenko, Zh. Fiz. Khimii, 38, 2088 (1964). The experiments were conducted with an ozonizer at temperatures of 0, 20, 47 and 87C. At every temperature the initial pressure of CO<sub>2</sub> was varied from 100 to 700 mm of Hg.

Card 1/2

L-16670-65

ACCESSION NR: AP4044452

The power of the discharge was varied from 4-8 to 70-100 watts. For every power of the discharge there exists a stationary equilibrium volume of the enrichment coefficient. The calculated separation coefficients are independent of the power of the discharge, temperature of the walls of the ozonizer and initial pressure. It is shown that in a silent discharge during circulation CO<sub>2</sub> is enriched in C<sup>13</sup> and O<sup>18</sup> and CO is depleted of these isotopes. The produced oxygen is also enriched in O<sup>18</sup> for which the coefficient is equal to 1.173±0.014. Orig. art. has: 5 figures and 1 table

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova  
(Moscow State University)

SUBMITTED: 08oc.89

ENCL: 00

SUB CODE: GC

NO REF SOV: 004

OTHER: 000

Card 2/2

SEMICKHIN, I.A.; ANDREYEV, Yu.P.; PANCHENKOV, G.M.

Dissociation kinetics of carbon dioxide in the silent discharge.  
Zhur. fiz. khim. 38 no.9:2275-2278 S '64. (MIRA 17:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

L 34982-65 EWI(m)/T/EWP(t)/EWP(b)/EWA(c) JB

ACCESSION NR: AP5004360

235/0076/65/039/001/0190/0194  
228

AUTHOR: Semiokhin, I. A.; Andreyev, Yu. P.; Panchenkov, G. N.; Bayramov, V. I.

TITLE: Kinetics of the dissociation of carbon dioxide in a quiet electric discharge under gas circulation conditions

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 1, 1965, 190-194

TOPIC TAGS: carbon dioxide, electric discharge, carbon monoxide, reaction kinetics, dissociation

ABSTRACT: The dissociation of CO<sub>2</sub> in a quiet discharge has been considered by these authors before (Zhur. fiz. khim, 38, 2076, 1964). Reversible equations of the first and the second order were used for kinetic analysis of the dissociation of CO<sub>2</sub> in a quiet discharge during circulation of the gas. It was shown that first order equations correspond more closely to the experimental data. Dissociation and recombination of CO<sub>2</sub> molecules are the result of electron collisions. The yield of CO as a function of specific energy is shown in Figure 1 of the Enclosure. The efficiency of chemical action of the discharge is independent of the discharge power in the 100-30 watt range, but it falls sharply when the discharge power is lowered from 30 to 4 watts. Dissociation and recombination rates

Card 1/3

L 34982-65  
ACCESSION NR: AP5004960

for CO<sub>2</sub> were studied in relationship to the temperature of the walls of the ozonizer in which the experiments were conducted and the initial gas pressure in the system. Orig. art. has: 7 figures, 1 table and 23 equations.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 07Jan64

ENCL: 01

SUB CODE: GC, IC

NO REF SOV: 003

OTHER: 000

Card 2/3

L 34982-65

ACCESSION NR: AP5004360

ENCLOSURE: 01

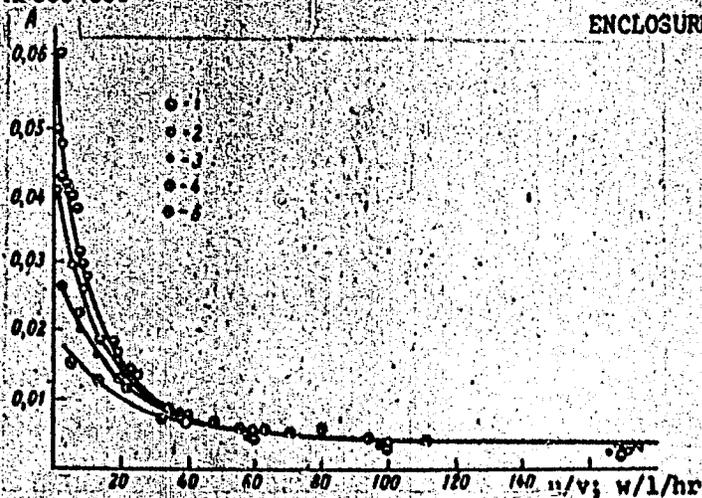


Fig. 1. Energy yield of CO as a function of specific energy at various discharge powers: 1-4, 2-8, 3-16.7, 4-37, 5-70 watts (initial pressure = 300 mm Hg; temp of ozonizer--47° C)

Card 3/3

L 10678-65 EWT(1)/EPA(W)-2/EEG(t)/EWA(m)-2 Pub-24 ASD(a)-5/AEDG(b)/  
AEDC(a)/AFW/SSD/AFIC(p) 8/0189/64/000/005/0010/0006  
ACCESSION NR: AF1017646

AUTHORS: Saidikhin, I. A.; Andreyev, Yu. P.; Panchenkov, G. M.

TITLE: The effect of impurities on the dissociation of carbon dioxide gas in silent discharge

SOURCE: Moscow, Universitet. Vestnik. Seriya 2. Khimiya, no. 5, 1964, 40-46 .

TOPIC TAGS: dissociated gas, combustion dissociation, electric discharge

ABSTRACT: This paper describes the effects of He, A, N<sub>2</sub>, O<sub>2</sub>, and CO on the kinetics of CO<sub>2</sub> dissociation during electrical discharge. The actual experiments are to be described in a subsequent paper. The experimental method has been previously described by the authors (Zh. fis. khimii, 38, 2088, 1964). Impurity concentrations were varied from 4.8 to 60% (giving rise to pressure changes from 15 to 450 mm Hg). The total pressure was varied from 115 to 750 mm Hg. Increase in impurity content (except for He) gave increased disruptive voltage of combustion. The addition of He caused no change in this voltage, apparently because He requires

Card 1/3

L 10678-65

ACCESSION NR: APL047646

no energy in the presence of  $\text{CO}_2$ . At a fixed pressure, the combustion voltage decreased with increase in He and A concentration, but remained constant with increase in  $\text{N}_2$ ,  $\text{O}_2$ , and CO. The degree of  $\text{CO}_2$  dissociation (equilibrium) increased from 37.7% with no He impurity to 20.7% in the presence of 60% He (when the total initial pressure of the gas mixture was 750 mm Hg). Change in  $\text{CO}_2$  pressure (without impurity) from 300 to 750 mm Hg led to a similar change in degree of dissociation. The authors discovered a significant fact: the expenditure of energy during dissociation of 1 mole  $\text{CO}_2$  (on attaining steady state without impurities) depends weakly on the pressure. It amounts, in arbitrary units for this experiment, to 5-6 v hrs for each percent of CO that forms, reduced to normal conditions, or to 2.1-2.5 v hrs for each mm Hg of CO that forms. The experimental results show that the addition of  $\text{O}_2$  and CO to the initial gas mixture leads to a decrease in degree of  $\text{CO}_2$  dissociation at the equilibrium-steady state and to a decrease in the equilibrium constant. This is apparently due to a decline in temperature in the discharge zone because of loss of some energy during excitation of the  $\text{O}_2$  and CO molecules, energy that is not then used in the dissociation of  $\text{CO}_2$ . The addition of inert constituents at constant pressure should not change the degree of  $\text{CO}_2$

Card 2/3

L 10678-65

ACCESSION NR: APL047516

dissociation. In an electrical discharge, the useless or the energetically useful consumption of energy leads to decrease or increase in degree of  $CO_2$  dissociation, and this must be related to rise or fall in temperature of the  $CO_2$  gas in the system. Orig. art. Rus: 8 figures, 1 table, and 11 formulas.

ASSOCIATION: Moskorskiy universitet (Moscow University)

SUBMITTED: 04Apr64

ENCL: 00

SUB CODE: ME

NO REF SOV: 008

OTHER: 000

Card 3/3

ANDREYEV, Yu.P.; SEMIORHIN, I.A.; PANCHENKOV, G.M.

Kinetics of carbon dioxide dissociation with a titans in a  
silent electric discharge. Vest. Mosk. un. Ser. 2: Khim. 20  
no.6:24-29 N-D '65. (SIRA 19:1)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta. Submitted  
Aug. 1, 1964.

SEMIOKHIN, I.A.; ANDREYEV, Yu.P.; PANCHENKOV, G.M.; BAYRAMOV, V.T.

Dissociation kinetics of carbon dioxide in the silent electrical discharge under gas circulation conditions. Zhur. fiz. khim. 39 no. 1:190-194 Ja '65 (MIRA 19:1)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.  
Submitted January 7, 1964.

SEMIOKHIN, I.A.; ANDREYEV, Yu.P.; PANCHENKOV, G.M.

Oxidation of carbon monoxide in a silent electric discharge.  
Zhur. fiz. khim. 39 no.9:2245-2251 S '65. (MIRA 18:10)

1. Khimicheskiy fakul'tet, Moskovskiy gosudarstvennyy uni-  
versitet imeni M.V. Lomonosova.

ANDREYEV, Yu.P.; SEMIONIN, I.A.; FANCHEKOV, G.M.

Oxidation kinetics of carbon monoxide in a silent electric discharge. Zhur. fiz. khim. 39 no.10:2515-2519, 1964.

(MIRA 18:12)

1. Moskovskiy gosudarstvennyy universitet imeni Leninsova.  
Submitted August 1, 1964.

ACC NR: AP6032270

SOURCE CODE: UR/0076/66/040/009/2145/2149

AUTHOR: Andreyev, Yu. P.; Semlokhin, I. A.; Panchenkov, G. M.; Utirov, B. U.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Oxidation kinetics of carbon monoxide containing additives in a silent discharge

SOURCE: Zhurnal fizicheskoy khimii, v. 40, no. 9, 1966, 2145-2149

TOPIC TAGS: oxidation kinetics, carbon monoxide, combustion modifier, nitrogen, argon, helium

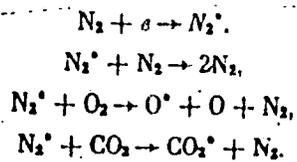
ABSTRACT: The mechanism of action of nitrogen, argon, and helium additives on the oxidation of carbon monoxide in a silent discharge has been studied. The experiments were carried out in a closed circulation system described earlier (I. A. Semlokhin, Yu. P. Andreyev, G. M. Panchenkov. Zh. Fiz. khimii, 38, 2076, 1964). The concentration of the additives varied from 1.8 to 60%, which corresponds to a change in the total initial pressure of 315 to 750 mm Hg. The initial pressure of the stoichiometric mixture of  $\text{CO} + 1/2 \text{O}_2$  was the same in all the experiments, viz., 300 mm Hg. The current was 38 mamp. A kinetic analysis of the CO oxidation reaction was carried out using equations for reversible first-order reactions. On the basis of the experimental data and the kinetic analysis, it was established that argon and helium are

Card 1/2

UDC: 541.124/.128+541.13

ACC NR: AP6032270

inert diluents, while nitrogen is an "energetic catalyst" of the CO oxidation reaction:



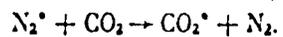
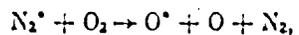
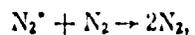
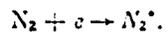
Orig. art. has: 6 figures and 6 formulas. [WA-68]

SUB CODE: 07, 21/ SUBM DATE: 02Apr65/ ORIG REF: 005/

Card 2/2

ACC NR: AP6032270

inert diluents, while nitrogen is an "energetic catalyst" of the CO oxidation reaction:



Orig. art. has: 6 figures and 6 formulas. [WA-68]

SUB CODE: 07, 21/ SUBM DATE: 02Apr65/ ORIG REF: 005/

Card 2/2

SHASHLOV, B.A.; ANDREYEV, Yu.S.

Sensitometric light source for testing industrial photographic films.  
Zhur.nauch.i prikl.fot. i kin. 5 no.6:448-449 N-D '60.

(MIRA 14:1)

1.Moskovskiy poligraficheskiy institut.  
(Photography--Films--Testing)

ANDREYEV, Yu.S.; SHASHLOV, B.A.

Optical properties of photosensitive layers used in photo  
copying processes. Zhur. nauch. i prikl. fot. i kin. 10  
no.1:38-46 Ja-F '65. (MIRA 18:4)

1. Moskovskiy poligraficheskiy institut.

KILESSO, A.I.; FARAMAZYAN, R.A.; KONONYUK, B.Z.; MARTINSEN, Z.A.;  
ANDREYEV, Yu.V.; SLAVIN, S.V.; RUSSETSKIY, S.B.; GLUSHKOV,  
V.P., otv. red.; PLISKINA, Ye.M., red.; TIKHOMIROVA, S.G.,  
tekhn. red.

[The shipbuilding industry of capitalist countries] Sudostroitel'naya promyshlennost' kapitalisticheskikh stran.  
Moskva, Izd-vo AN SSSR, 1963. 471 p. (MIRA 16:10)

1. Akademiya nauk SSSR, Institut mirovoy ekonomiki i mezhdunarodnykh otnosheniy.

(Shipbuilding)

ANDREYEV, Yu.Ya.; BERLIN, G.S.; KOTLYAR, A.A.

Electronic high-temperature scales. Prib.i tekhn.eksp. 6 no.5:157-  
159 S-0 '61. (MIRA 14:10)

(Weighing instruments)

SOROKIN, A.; ANTONOV-GOLITSIN, K., starshiy predstavitel'

Spezifikatsiya na the principal principles of the...  
Her. Plat. 25 no. 4:68-8 (1978)

1. Resheniya k...  
Plata...  
inst...  
inst...

ANDREYEV-GOLUBEV, Nikolay Ivanovich; BRUKHIS, Grigoriy Yefimovich;  
SOKOLOVA, Ye.I., red.; LAVRETOVA, N.B., tekhn. red.

[Commercial operation of the merchant marine] Kommercheskaia  
ekspluatatsiia morskogo transporta. Moskva, Izd-vo "Morskoi  
transport," 1961. 229 p. (MIRA 15:4)  
(Shipping)



KRYLOV, K., inzh.; ANDREYEVA, A., inzh.

Relationship of the wear of chrome-plated cylinders to the roughness  
of their surfaces. Grazhd. av. 12 no.7:25-26 JI '55. (MIRA 11:6)  
(Airplanes--Motors--Cylinders)

ANDREYEVA, A. (Riga); REYNIS, V. [Reinis, V.](Riga)

Concerning the composition of autoclaved cinder concrete. Vestis  
Latv ak no.8:47-48 '60. (KEAI 10:9)

1. Akademiya nauk Latvyskoy SSR, Institut stroitel'stva i  
arkhitektury.

(Concrete)

ANDREYEVA, A., inzh.

Faults in television scanning devices. Radio no.1:37-39 Ja '61.  
(MIRA 14:9)

(Television--Repairing)

ANDREYEVA, A., inzh.

More concerning some general faults in television receivers.

Radio no.2:36-37 F '61.

(MIRA 14:9)

(Television--Receivers and reception)

ANDRIYEVA, A., inzh.

Faults in the scanning devices of television receivers. Radio  
no.3:51 Mr '61. (MIRA 14:8)  
(Television--Receivers and reception)

ANDREYEVA, A., inzh.; BURUCHENKOV, Yu., tekhnik

Redesigning of the "Luch" television receiver for operation with  
35LK2B picture tubes. Radio no.4:33-34 Ap '61. (MIRA 14:7)  
(Television—Receivers and reception)

ANDREYEVA, A., inzh.

Methodology for converting the "Ekran" television receiver for  
operation on the 35LK2B picture tube. Radio no.7:38-40 J1 '61.  
(MIRA 14:10)

(Television--Receivers and reception)

ANDREYEVA, A., inzh.

Horizontal sweep stages in "Zaria-2", "Volkhov", and "Sputnik"  
television receivers. Radio no.3:27 Mr '62. (MIRA 15:3)  
(Television—Receivers and reception)